

2/15/2017

Mr. Curt Lueckenhoff
Missouri Dept. of Natural Resources
2710 West Main

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1702179

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 2/13/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker
Project Manager

WORK ORDER #: 1702179

Work Order Summary

CLIENT:	Mr. Curt Lueckenhoff Missouri Dept. of Natural Resources 2710 West Main Jefferson City, MO 65109	BILL TO:	Accounts Payable Missouri Dept. of Natural Resources P.O Box 176 Jefferson City, MO 65102
PHONE:	573-526-3363	P.O. #	3ESP170636
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	02/13/2017	CONTACT:	Brian Whittaker
DATE COMPLETED:	02/15/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (170793)	Modified TO-15	6.3 "Hg	5.1 psi
02A	U1 (170794)	Modified TO-15	7.1 "Hg	5 psi
03A	Lab Blank	Modified TO-15	NA	NA
04A	CCV	Modified TO-15	NA	NA
05A	LCS	Modified TO-15	NA	NA
05AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 02/15/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified TO-15
Missouri Dept. of Natural Resources
Workorder# 1702179

Two 6 Liter Summa Canister (100% Cert Ambient) samples were received on February 13, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: D1 (170793)

Lab ID#: 1702179-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.53	0.84	2.6
Freon 11	0.17	0.26	0.96	1.5
Ethanol	0.86	2.7	1.6	5.0
Acetone	0.86	4.2	2.0	10
2-Propanol	0.86	4.0	2.1	9.9
Hexane	0.17	0.19	0.60	0.68
Benzene	0.17	0.20	0.55	0.65
Toluene	0.17	0.24	0.64	0.92

Client Sample ID: U1 (170794)

Lab ID#: 1702179-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.52	0.87	2.6
Freon 11	0.18	0.26	0.99	1.5
Ethanol	0.88	2.0	1.6	3.8
Acetone	0.88	5.6	2.1	13
2-Propanol	0.88	1.5	2.2	3.6
Hexane	0.18	0.20	0.62	0.71
2-Butanone (Methyl Ethyl Ketone)	0.88	0.93	2.6	2.7



Air Toxics

Client Sample ID: D1 (170793)

Lab ID#: 1702179-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021414	Date of Collection:	2/7/17 1:30:00 PM
Dil. Factor:	1.71	Date of Analysis:	2/14/17 05:09 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.53	0.84	2.6
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.86	Not Detected	1.8	Not Detected
Vinyl Chloride	0.17	Not Detected	0.44	Not Detected
1,3-Butadiene	0.17	Not Detected	0.38	Not Detected
Bromomethane	0.86	Not Detected	3.3	Not Detected
Chloroethane	0.86	Not Detected	2.2	Not Detected
Freon 11	0.17	0.26	0.96	1.5
Ethanol	0.86	2.7	1.6	5.0
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Acetone	0.86	4.2	2.0	10
2-Propanol	0.86	4.0	2.1	9.9
Carbon Disulfide	0.86	Not Detected	2.7	Not Detected
3-Chloropropene	0.86	Not Detected	2.7	Not Detected
Methylene Chloride	0.34	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.62	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Hexane	0.17	0.19	0.60	0.68
1,1-Dichloroethane	0.17	Not Detected	0.69	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.86	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Tetrahydrofuran	0.86	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.83	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.93	Not Detected
Cyclohexane	0.17	Not Detected	0.59	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.86	Not Detected	4.0	Not Detected
Benzene	0.17	0.20	0.55	0.65
1,2-Dichloroethane	0.17	Not Detected	0.69	Not Detected
Heptane	0.17	Not Detected	0.70	Not Detected
Trichloroethene	0.17	Not Detected	0.92	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.79	Not Detected
1,4-Dioxane	0.17	Not Detected	0.62	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.70	Not Detected
Toluene	0.17	0.24	0.64	0.92
trans-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.93	Not Detected
Tetrachloroethene	0.17	Not Detected	1.2	Not Detected
2-Hexanone	0.86	Not Detected	3.5	Not Detected



Air Toxics

Client Sample ID: D1 (170793)

Lab ID#: 1702179-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021414	Date of Collection:	2/7/17 1:30:00 PM
Dil. Factor:	1.71	Date of Analysis:	2/14/17 05:09 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.79	Not Detected
Ethyl Benzene	0.17	Not Detected	0.74	Not Detected
m,p-Xylene	0.17	Not Detected	0.74	Not Detected
o-Xylene	0.17	Not Detected	0.74	Not Detected
Styrene	0.17	Not Detected	0.73	Not Detected
Bromoform	0.17	Not Detected	1.8	Not Detected
Cumene	0.17	Not Detected	0.84	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.84	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.84	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.84	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.84	Not Detected
1,3-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.17	Not Detected	0.88	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.86	Not Detected	6.3	Not Detected
Hexachlorobutadiene	0.86	Not Detected	9.1	Not Detected

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: U1 (170794)

Lab ID#: 1702179-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021415	Date of Collection:	2/7/17 1:20:00 PM
Dil. Factor:	1.76	Date of Analysis:	2/14/17 05:50 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.52	0.87	2.6
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.88	Not Detected	1.8	Not Detected
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
1,3-Butadiene	0.18	Not Detected	0.39	Not Detected
Bromomethane	0.88	Not Detected	3.4	Not Detected
Chloroethane	0.88	Not Detected	2.3	Not Detected
Freon 11	0.18	0.26	0.99	1.5
Ethanol	0.88	2.0	1.6	3.8
Freon 113	0.18	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Acetone	0.88	5.6	2.1	13
2-Propanol	0.88	1.5	2.2	3.6
Carbon Disulfide	0.88	Not Detected	2.7	Not Detected
3-Chloropropene	0.88	Not Detected	2.8	Not Detected
Methylene Chloride	0.35	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Hexane	0.18	0.20	0.62	0.71
1,1-Dichloroethane	0.18	Not Detected	0.71	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.88	0.93	2.6	2.7
cis-1,2-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Tetrahydrofuran	0.88	Not Detected	2.6	Not Detected
Chloroform	0.18	Not Detected	0.86	Not Detected
1,1,1-Trichloroethane	0.18	Not Detected	0.96	Not Detected
Cyclohexane	0.18	Not Detected	0.60	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.88	Not Detected	4.1	Not Detected
Benzene	0.18	Not Detected	0.56	Not Detected
1,2-Dichloroethane	0.18	Not Detected	0.71	Not Detected
Heptane	0.18	Not Detected	0.72	Not Detected
Trichloroethene	0.18	Not Detected	0.94	Not Detected
1,2-Dichloropropane	0.18	Not Detected	0.81	Not Detected
1,4-Dioxane	0.18	Not Detected	0.63	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.80	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.72	Not Detected
Toluene	0.18	Not Detected	0.66	Not Detected
trans-1,3-Dichloropropene	0.18	Not Detected	0.80	Not Detected
1,1,2-Trichloroethane	0.18	Not Detected	0.96	Not Detected
Tetrachloroethene	0.18	Not Detected	1.2	Not Detected
2-Hexanone	0.88	Not Detected	3.6	Not Detected

Client Sample ID: U1 (170794)

Lab ID#: 1702179-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021415	Date of Collection: 2/7/17 1:20:00 PM
Dil. Factor:	1.76	Date of Analysis: 2/14/17 05:50 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.18	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.81	Not Detected
Ethyl Benzene	0.18	Not Detected	0.76	Not Detected
m,p-Xylene	0.18	Not Detected	0.76	Not Detected
o-Xylene	0.18	Not Detected	0.76	Not Detected
Styrene	0.18	Not Detected	0.75	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	Not Detected	0.86	Not Detected
1,1,2,2-Tetrachloroethane	0.18	Not Detected	1.2	Not Detected
Propylbenzene	0.18	Not Detected	0.86	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.86	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.86	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.86	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.91	Not Detected
1,2-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.88	Not Detected	6.5	Not Detected
Hexachlorobutadiene	0.88	Not Detected	9.4	Not Detected

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1702179-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021410	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/14/17 01:57 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	Not Detected	0.49	Not Detected
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.50	Not Detected	1.0	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Acetone	0.50	Not Detected	1.2	Not Detected
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
1,1,1-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.10	Not Detected	0.63	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.10	Not Detected	0.32	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
Toluene	0.10	Not Detected	0.38	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
1,1,2-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected
2-Hexanone	0.50	Not Detected	2.0	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 1702179-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021410	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/14/17 01:57 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Ethyl Benzene	0.10	Not Detected	0.43	Not Detected
m,p-Xylene	0.10	Not Detected	0.43	Not Detected
o-Xylene	0.10	Not Detected	0.43	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
1,1,2,2-Tetrachloroethane	0.10	Not Detected	0.69	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1702179-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021405	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/14/17 10:20 AM

Compound	%Recovery
Freon 12	98
Freon 114	93
Chloromethane	82
Vinyl Chloride	90
1,3-Butadiene	88
Bromomethane	133 Q
Chloroethane	121
Freon 11	107
Ethanol	118
Freon 113	99
1,1-Dichloroethene	106
Acetone	100
2-Propanol	108
Carbon Disulfide	105
3-Chloropropene	115
Methylene Chloride	99
Methyl tert-butyl ether	116
trans-1,2-Dichloroethene	104
Hexane	113
1,1-Dichloroethane	99
2-Butanone (Methyl Ethyl Ketone)	110
cis-1,2-Dichloroethene	107
Tetrahydrofuran	105
Chloroform	100
1,1,1-Trichloroethane	102
Cyclohexane	114
Carbon Tetrachloride	116
2,2,4-Trimethylpentane	108
Benzene	102
1,2-Dichloroethane	105
Heptane	115
Trichloroethene	105
1,2-Dichloropropane	98
1,4-Dioxane	112
Bromodichloromethane	108
cis-1,3-Dichloropropene	114
4-Methyl-2-pentanone	118
Toluene	107
trans-1,3-Dichloropropene	116
1,1,2-Trichloroethane	100
Tetrachloroethene	107
2-Hexanone	116

Client Sample ID: CCV

Lab ID#: 1702179-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021405	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/14/17 10:20 AM

Compound	%Recovery
Dibromochloromethane	116
1,2-Dibromoethane (EDB)	110
Chlorobenzene	105
Ethyl Benzene	116
m,p-Xylene	120
o-Xylene	123
Styrene	121
Bromoform	124
Cumene	127
1,1,2,2-Tetrachloroethane	101
Propylbenzene	109
4-Ethyltoluene	109
1,3,5-Trimethylbenzene	115
1,2,4-Trimethylbenzene	118
1,3-Dichlorobenzene	101
1,4-Dichlorobenzene	95
alpha-Chlorotoluene	114
1,2-Dichlorobenzene	101
1,2,4-Trichlorobenzene	110
Hexachlorobutadiene	95

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1702179-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021407	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/14/17 11:57 AM

Compound	%Recovery	Method Limits
Freon 12	101	70-130
Freon 114	96	70-130
Chloromethane	88	70-130
Vinyl Chloride	99	70-130
1,3-Butadiene	90	70-130
Bromomethane	141 Q	70-130
Chloroethane	133 Q	70-130
Freon 11	110	70-130
Ethanol	108	70-130
Freon 113	101	70-130
1,1-Dichloroethene	108	70-130
Acetone	105	70-130
2-Propanol	110	70-130
Carbon Disulfide	111	70-130
3-Chloropropene	112	70-130
Methylene Chloride	100	70-130
Methyl tert-butyl ether	116	70-130
trans-1,2-Dichloroethene	116	70-130
Hexane	119	70-130
1,1-Dichloroethane	99	70-130
2-Butanone (Methyl Ethyl Ketone)	114	70-130
cis-1,2-Dichloroethene	100	70-130
Tetrahydrofuran	109	70-130
Chloroform	103	70-130
1,1,1-Trichloroethane	106	70-130
Cyclohexane	119	70-130
Carbon Tetrachloride	98	70-130
2,2,4-Trimethylpentane	113	70-130
Benzene	104	70-130
1,2-Dichloroethane	103	70-130
Heptane	122	70-130
Trichloroethene	107	70-130
1,2-Dichloropropane	102	70-130
1,4-Dioxane	113	70-130
Bromodichloromethane	111	70-130
cis-1,3-Dichloropropene	124	70-130
4-Methyl-2-pentanone	123	70-130
Toluene	111	70-130
trans-1,3-Dichloropropene	113	70-130
1,1,2-Trichloroethane	104	70-130
Tetrachloroethene	108	70-130
2-Hexanone	117	70-130

Client Sample ID: LCS

Lab ID#: 1702179-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021407	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/14/17 11:57 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	114	70-130
1,2-Dibromoethane (EDB)	111	70-130
Chlorobenzene	108	70-130
Ethyl Benzene	121	70-130
m,p-Xylene	121	70-130
o-Xylene	122	70-130
Styrene	125	70-130
Bromoform	122	70-130
Cumene	126	70-130
1,1,2,2-Tetrachloroethane	101	70-130
Propylbenzene	109	70-130
4-Ethyltoluene	112	70-130
1,3,5-Trimethylbenzene	117	70-130
1,2,4-Trimethylbenzene	119	70-130
1,3-Dichlorobenzene	100	70-130
1,4-Dichlorobenzene	96	70-130
alpha-Chlorotoluene	123	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	103	70-130
Hexachlorobutadiene	88	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1702179-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021408	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/14/17 12:40 PM

Compound	%Recovery	Method Limits
Freon 12	101	70-130
Freon 114	96	70-130
Chloromethane	89	70-130
Vinyl Chloride	99	70-130
1,3-Butadiene	90	70-130
Bromomethane	143 Q	70-130
Chloroethane	132 Q	70-130
Freon 11	110	70-130
Ethanol	106	70-130
Freon 113	101	70-130
1,1-Dichloroethene	111	70-130
Acetone	107	70-130
2-Propanol	112	70-130
Carbon Disulfide	110	70-130
3-Chloropropene	112	70-130
Methylene Chloride	101	70-130
Methyl tert-butyl ether	117	70-130
trans-1,2-Dichloroethene	118	70-130
Hexane	120	70-130
1,1-Dichloroethane	101	70-130
2-Butanone (Methyl Ethyl Ketone)	116	70-130
cis-1,2-Dichloroethene	100	70-130
Tetrahydrofuran	111	70-130
Chloroform	104	70-130
1,1,1-Trichloroethane	106	70-130
Cyclohexane	120	70-130
Carbon Tetrachloride	98	70-130
2,2,4-Trimethylpentane	113	70-130
Benzene	104	70-130
1,2-Dichloroethane	103	70-130
Heptane	118	70-130
Trichloroethene	106	70-130
1,2-Dichloropropane	101	70-130
1,4-Dioxane	114	70-130
Bromodichloromethane	112	70-130
cis-1,3-Dichloropropene	124	70-130
4-Methyl-2-pentanone	123	70-130
Toluene	111	70-130
trans-1,3-Dichloropropene	117	70-130
1,1,2-Trichloroethane	104	70-130
Tetrachloroethene	110	70-130
2-Hexanone	118	70-130



Client Sample ID: LCSD

Lab ID#: 1702179-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20021408	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/14/17 12:40 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	117	70-130
1,2-Dibromoethane (EDB)	113	70-130
Chlorobenzene	110	70-130
Ethyl Benzene	121	70-130
m,p-Xylene	127	70-130
o-Xylene	128	70-130
Styrene	130	70-130
Bromoform	122	70-130
Cumene	128	70-130
1,1,2,2-Tetrachloroethane	102	70-130
Propylbenzene	112	70-130
4-Ethyltoluene	115	70-130
1,3,5-Trimethylbenzene	119	70-130
1,2,4-Trimethylbenzene	122	70-130
1,3-Dichlorobenzene	103	70-130
1,4-Dichlorobenzene	100	70-130
alpha-Chlorotoluene	126	70-130
1,2-Dichlorobenzene	104	70-130
1,2,4-Trichlorobenzene	106	70-130
Hexachlorobutadiene	93	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	104	70-130